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Experiences of Health System Preceptors and Faculty Advisors with Community Service-Learning Initiatives: Learning from the Dalhousie University Drug Use Management and Policy Residency Program

Sarah Bowen
University of Alberta

Ingrid Sketris
Ethel Langille Ingram
Dalhousie University

From 2001 to 2011, an innovative approach to pharmaceutical policy and drug use management graduate education—the Drug Use Management and Policy Residency Program—was developed and implemented by the College of Pharmacy at Dalhousie University in Halifax, Nova Scotia, Canada. This in-depth qualitative assessment of the experience of faculty members and site preceptors who guided residents in their 17-week placements identifies components, characteristics, strategies, and principles associated with successful service-learning initiatives and provides guidance around the development of programs in other jurisdictions.

Keywords: *engaged scholarship; health care system; Canada*

A number of forces are converging to focus concern on the ability of universities to appropriately prepare researchers to contribute to key issues facing society today. This concern is reflected in the call to "engaged scholarship" and—within health services research—the increasing expectation of partnership research designed in collaboration with, and in response to, knowledge-user needs (Bowen & Graham, 2013). Research identifying interaction between researchers and users as a critical factor in research uptake has led to greater attention to the "generalizable" skills (e.g., system knowledge, working with multiple stakeholders, communication, negotiation, etc.) needed to enable researchers to be effective (Dash, Gowman, & Traynor, 2003; Ginsburg, Lewis, Zackheim, & Casebeer, 2007).

It has been noted that much engaged research and, therefore, many service-learning programs, focus on providing direct service within communities or within health services organizations; however, fewer examples of policy-focused participatory research with government involvement are available (Minkler, 2010). In addition, the development of service-learning in the context of Canadian universities is fairly recent (Newman, 2013). A literature search of CINAHL, Embase and PubMed from 2000 to 2014 using the keywords (and expanders) "evaluation (program)," "preceptor," "service-learning," "engaged scholarship," and "graduate students" identified that while a number of benefits to service-learning have been identified, there has been limited evaluation of the actual impacts of such initiatives in a health services setting, particularly on issues related to policy and health management. Findings from this evaluation research, therefore, are intended to address this identified research gap.

This article reports on in-depth qualitative assessment of an innovative approach to pharmaceutical policy and drug use management graduate education—the Drug Use Management and Policy Residency Program (DUMPRP)—which was developed and implemented at Dalhousie University from 2001 to 2011. Dalhousie is the largest university in the Canadian Atlantic province of Nova Scotia, with an enrolment of 3,500 graduate students. The DUMPRP program was intended

to develop capacity among graduate students and junior faculty members to conduct research that would meet the needs of pharmaceutical program decision-makers in provincial governments, primary care, continuing care, and hospitals. Details of this program (Conrad, Murphy, & Sketris, 2005; Sketris, 2013) and results of analysis of student self-assessment are described elsewhere (Conrad, Sketris, & Langille Ingram, 2013).

The research described in this article explored the experience of faculty members (academic advisors) and site preceptors (organizational sponsors) who guided the 17-week residencies. In addition to informing future development of the program, this research was intended to (a) identify components, characteristics, strategies and principles associated with success, and (b) guide development of service-learning programs in other jurisdictions.

Methods

This utilization-focused evaluation adopted a "goals free" orientation (Patton, 1997). Rather than limiting evaluation to assessing specific project objectives or attempting to compare findings to the published literature, the evaluation focused on the actual experiences and impacts of the program. An interview guide for both preceptors and faculty advisors was developed by an external evaluator in collaboration with program staff, based on program objectives and issues identified through the literature. Questions focused on (a) the process of project development; (b) roles of participants; (c) motivation for involvement; (d) perspectives on benefits, challenges, and risks; (e) impacts of the residencies on individuals and the health system; and (f) suggestions for improvement. Ethics approval was received from Dalhousie University's Health Sciences Human Research Ethics Board.

Of the 31 preceptors and 26 faculty advisors who participated in the program between 2001 and 2011, 48 were located and provided written consent to be interviewed by telephone. Each was contacted by email with a request to participate at a time of his or her convenience. Up to two follow-up reminder emails were sent. The external evaluator conducted all interviews in order to minimize social desirability bias. Thirty-seven confidential semi-structured telephone interviews (22 preceptors, 15 faculty advisors) were completed. Three individuals declined, and eight did not respond to the request and two follow-up emails. A somewhat higher percentage (70%) of preceptors completed interviews compared to faculty advisors (58%).

The number of residents supervised by participants during the study period ranged from one to five. Evaluation participants were involved at various times in the ten-year life of the program, from the first to final year, and also varied as to the number of residents and types of projects supervised. Participants described a wide variety of roles within the program and varying levels of involvement with residents.

Interviews, completed between November 2010 and January 2011, ranged from 20 minutes to over one hour in length. Interviews were audio-taped with the consent of participants. The interviewer took notes and then immediately transcribed them. Audiotapes were then reviewed and transcripts expanded (including incorporation of direct quotes) with the help of a research assistant. The external evaluator undertook the content analysis, first by question, then separately for preceptors and faculty advisors to facilitate comparison of responses. Codes were then combined into categories and all transcripts re-analyzed to identify cross-cutting themes.

Key Findings

Motivation for Involvement

As the first response to a query about what led to their involvement in the program, most participants simply stated that they "were asked" to participate. Further analysis, however, reveals a more complex context—a number of factors were identified that, together, led to participation: the

credibility of the program and willingness to "help" the individual making the request; perceived benefit to the health system and to students; and some anticipation of direct or indirect personal benefit.

Credibility of the requestor (in most cases, the program director) emerged as a critical factor in both faculty and preceptor involvement. For instance, participants noted, "[The director] is held in very high regard around here," "[the director's] reputation as prominent and collaborative;" or "[the director's] reputation as he tries to build bridges and expand horizons."

The most frequently noted reason for involvement—particularly for preceptors but also for a few faculty advisors—was the perceived benefits of the program to the health system or to improve patient care. Many saw the residency program as an opportunity for "getting a project done that's important to the organization" (preceptor). However, while preceptors spoke about practical problems facing the health system, faculty advisors were more likely to speak of opportunities to build health system capacity. For instance, a preceptor noted:

> I am a huge supporter of involving students in day-to-day work particularly from an agency perspective…. [There are] multiple concurrent benefits—not just getting the work done, but getting it done faster than we could on our own—[students] are cheaper, and often better than consultants.

Another faculty advisor attributed involvement to the desire to help "address the need for information management in the health professions."

Most participants identified anticipated personal benefit to involvement, ranging from direct benefits to career benefits, to opportunities to promote an area of interest or to work with admired colleagues or with students. Slightly more faculty advisors than preceptors identified career-related benefits, both practical (e.g., opportunity for publication or job advancement) and aspirational (e.g., expanding or enhancing ones' research ability through integration with practice). For instance, when asked why he/she participated, one faculty advisor responded with "Some selfishness. I knew if I moved to another job I could get a letter of reference from [the program director], while another faculty advisor was "interested in doing policy work related to the research I carry out." Similarly, one faculty advisor stated:

> I do theoretical work, am interested in how to improve the research in a particular area through use of new methods. It allowed me to interact with people who have a specialization in pharmacology. I learned a lot from them.

Preceptors responded with comments such as, "It was a nice match for me to move into the policy side of my career" and that they appreciated the "opportunity to be associated with academic institution, was really missing that in my job."

Anticipated benefit of involvement to students was a less dominant theme in motivating initial involvement (those who gave student benefit as a reason for involvement usually wanted to help a particular student), although it became an important theme by the end of the projects. Some participants saw the opportunity to work with students and contribute to their learning as a *personal* benefit; several observed that they "enjoyed working with students" and were motivated by students achieving their goals.

Many participants commented that involvement in the program was a "fit" with personal and organizational interests (e.g., "was in my area," "in my field of practice," "seemed a good fit with what I was doing"). At different points in the interviews, many faculty advisors and preceptors referred to the arrangement as a "win/win" situation. For many this "fit" was a precondition for involvement.

Additional themes included the participants' commitment to interdisciplinary opportunities and to working at the "interface" (preceptor), the chance to "practice one's craft in real life situations" (faculty advisor), and the sense of the increasing importance of this form of education. For instance, one faculty advisor stated "It's important to support interdisciplinary interaction on campus. The residency was able to be truly interdisciplinary by bringing the best of these two disciplines together," while a preceptor was "keen to mix academia and practice."

Some participants also noted involvement due to their professional or academic role. One faculty advisor noted that their contribution was "part of [my] overall responsibility to the university. Not just to students but how Dalhousie is known as an institution." Similarly a preceptor felt that involvement fulfilled two obligations: "to prepare students and get work done."

Experience with the Program

The majority of participants described their involvement in the DUMPRP as overwhelmingly positive. When asked if they would be willing to be a faculty advisor or preceptor again, responses such as "Tomorrow if I was asked," "Definitely!", "No hesitation," and "Oh absolutely!" were common.

Benefits and Rewards

Both faculty advisors and preceptors identified a number of diverse benefits and rewards of program involvement: (a) working with and contributing to students; (b) personal learning and emotional satisfaction; (c) career-related benefits; and (d) the opportunity to contribute to the health system.

The greatest benefits and rewards were described as the fun, the inspiration, and the satisfaction of working with the residents. One faculty advisor stated: "Seeing their progress really made what I do worthwhile. It is the sort of thing you live for, the reason we do what we do…revitalizes and inspires you." Another faculty advisor enjoyed "…'fanning the fire,' providing new researchers with opportunities to learn, train for their career, find his or her true interest." One preceptor appreciated "being able to help the resident, especially with politics of it—maneuvering around the marketing—the interface between data, policy, industry, and professional associations," while another explained:

> Seeing them go on to bigger and better things than you are doing. I am ever so proud of them that they do that…..rewards are seeing people grow and develop, to lever the experience to get their foot in the door somewhere else.

Completing an important project or seeing the impact of the work completed was also highlighted as a benefit or reward. One faculty advisor enjoyed "seeing worthwhile projects carried out," while a preceptor appreciated "the emotional reward… satisfaction of completing a piece of work."

Personal satisfaction also emerged as a theme. One participant commented that the "intangibles are more significant"; another that the rewards were "more personal than professional." Many emphasized the learning (of many different kinds) that they gained through the program. One faculty advisor described "gains in personal learning…I learn as much as I give," while a preceptor stated, "The best part about being the preceptor was I was able to learn and the valuable knowledge I was able to gain."

Participants also identified the benefits associated with working through the challenges the projects presented. For example, a preceptor who found supervising the resident very difficult noted that the experience "helped me make decisions; it was great learning for me." In a similar vein, a faculty advisor noted that "working through the setbacks … we had and the problems was a great learning experience for me too."

While few respondents spontaneously highlighted career advantages when asked about benefits, a much larger number identified positive career impacts when probed. Both preceptors and faculty advisors highlighted the career benefits of the opportunity to produce a publication, in some cases in a journal they would "not normally publish in," and to add this resident supervisory experience to their curriculum vitae. Several faculty advisors and preceptors noted direct impacts on their career progression. One faculty member found this experience to be "a teaching and supervising activity that I could count, experience of being a supervisor, a good thing on my CV, particularly at this stage of my career." Other faculty advisors noted direct application to their own teaching and research, and one advisor found s/he could "take what I have learned and what I have observed from this program to the classroom, and say, here are some real tangible life examples of this particular environment." Another faculty advisor explained:

> [For] my own research, it's very important to find practical problems where these methods can be applied. Address a practical problem that makes a change and makes the world a better place. Also you need data to work. The residency provides both meaningful questions and access to the data to answer them.

Indirect career benefits were also identified. These included opportunities to be involved in research that was of personal interest, the benefits of educational seminars offered through the program, and learning more about the realities of the health care system. Others spoke of learning through the challenges presented, including the experience of one preceptor to move "from knowing nothing to being a group leader—went from learner to teacher." Another preceptor found the experience to be "very impactful." This preceptor found "insights into realizing my own interest in an educational role vs. being a decision maker. It keeps you current, it keeps you interested, keeps you thinking. It's a good way to grow—remain excited about the profession."

A small number of both faculty advisors and preceptors also stressed the benefit of the program in allowing them to promote awareness of their own research area/discipline. A few participants noted no impacts or benefits to their careers, either directly or indirectly. However, one participant — who noted that there was no benefit because "our public service does not value that" — observed: "[W]e are doing it because it is the right thing to do."

Most participants felt highly valued by residents and by the DUMPRP, although there was more variation in the extent to which they felt valued by other faculty advisors and preceptors, or by the sponsoring agency and academia. There was also important variation in the extent to which faculty advisors felt supported by their department/faculty and the university as a whole.

Challenges and Frustrations

Key challenges identified by preceptors and faculty advisors related to time constraints, actual timing of the residency during the year, nature of the ethics review processes, and clarity of expectations and roles. A smaller number of participants raised concerns related to student readiness.

Time commitments and the time constraints imposed by the project (generally 17 weeks) were the most commonly identified challenges. Many found that the project required "more time than I planned" or that the workload was "more than I anticipated." One faculty advisor described the ways they felt the time constraints influenced the resident: "The resident was getting discouraged, afraid he would not have a product; it was more time in summer than I anticipated so things got pushed back to fall which made me very busy." Another faculty advisor described the challenge as "the age-old dilemma of not having enough time. I feel a little bit that I had let the resident down." One preceptor noted that "the biggest thing is that it is only a 4-month residency and it is really difficult to get an ethically approved project to do in that time." Similarly, another preceptor stated, "The size of the project and the timeframe for the residency frequently didn't match. No matter what I did I couldn't control that."

There appeared to be differences in how this potential "mismatch" was handled. In some cases there was an indication that the priority issues were not addressed or not addressed as thoroughly as hoped. As one experienced advisor noted: "Effects of the time crunch—need to trim things down, to fit it into an existing project. Because of time, this is better than embarking on something new." In other cases, it appeared that the sponsoring site or the preceptor "picked up" remaining work when the students went "back to their real work. … I needed to hire [a] resident for nine months to finish the projects." A few projects ended at earlier stages than originally proposed—for example, with a literature review, environmental scan, or preliminary analysis. Some participants also raised questions about having the project run over the summer months when some staff—and ethics committees—were on holidays.

The impact of timelines also depended on the resident's program. Those who used their project as their thesis had more time, while for others—such as those enrolling in medical school — more time would have been useful. Other factors affecting the difficulty students experienced with the time frame included previous background and experience, level of commitment to the program, unanticipated personal issues, and the type of research conducted (e.g., qualitative research was often perceived as more time consuming).

Diverse perspectives existed on the constraints presented by this 17-week timeline. Some saw it as given ("you just have to recognize how much you can do in 4 months"); others worried about the impact on, and fairness to, students. Moreover, others struggled personally with finding a balance between "what was expected vs. making it an adequate learning experience." For instance, when thinking about the time allotted for the experience, one preceptor explained:

> This is not a reflection on the program, but on me. I'm a busy person, lots of responsibilities, I work part time because other things—house, family, are important to me, I have lots of responsibilities outside of work. Everyone was aware of that going in, so we re-jigged the hours for the resident. These projects can grow and I guess, you know, I just tried to keep things in check with time management and I just hope in doing so I didn't disappoint.

University Research Ethics Boards processes also created challenges, in large part because of their impacts on timelines. Because ethics approval was a prerequisite for beginning many projects, delays in obtaining ethics approval sometimes meant that the project ran far behind schedule or even could not be completed. Some students and preceptors were not prepared for the work and time required to obtain ethics approval, an activity many described as "a huge frustration" and a "real issue." In addition, some questioned the appropriateness or need for ethics approval for some projects. As one Preceptor explained, "In my department we always do evaluation … but academic review insists on certain things, we don't have time, it gets in the way."

Some participants also encountered challenges related to role clarity. As one preceptor commented, "my role was never terribly explicit." A number of preceptors found some challenges related to academic expectations ("sorting out people's perceptions"). Some commented that faculty advisors may see the project as an "academic exercise." A few preceptors observed that they felt the faculty advisors needed to be "managed better." For instance, one preceptor stated that "some academic expectations were a bit above what they should have been, but that wasn't for me to manage," while another preceptor discussed different priorities related to publications: "I want a question answered and I don't need the publication, but the faculty advisor and (program staff) want the publication."

Indeed, differing expectations related to publications were common. While many stressed producing a publication as a major benefit—to them personally as well as to the resident—downsides were also observed in that "[the publication] is fraught with the timing issue and the overload issue." Moreover, an academic publication was not always seen to be important by preceptors. As one preceptor noted, "this is not important to bureaucrats." However, many had no

difficulty with differences in expectations, with some noting that the DUMPRP understood the differences in expectations—that "two levels" were necessary. Some preceptors explicitly recognized and supported the role of the residency as having a "primary purpose of learning," even though there was a need to have "a product useful to the organization."

A small number of participants noted challenges and difficulties related to specific students. These issues related to readiness, competence, and interpersonal skill. For instance, one faculty advisor explained, "I assumed a certain level of competence that unfortunately wasn't quite there. Also there were problems in getting him [a student] to follow directions." Similarly, as one preceptor explained, "Part of the problem is you have these young people who are very keen and sometimes they bit off more than they can do, don't know how to get things done, projects overdevelop."

Some specific challenges were also related to new Canadian (English as an additional language) students, such as additional time to support writing skills or to orient students to the Canadian health care environment. However, advisors also commented on the importance of the residency program in providing the orientation and learning that these residents would otherwise have difficulty achieving.

Perceived Impacts of the Program

Participants' perspectives on the impacts of the program on residents, the health system and academia and relationships between them were also explored.

Impacts on Residents

Benefits to residents from the program were identified; however, participants observed that this question was best addressed by residents themselves. Identified benefits focused broadly on the advantages to residents of the experience to their career, as the experience was seen to "strengthen their CV" and give them a "head start." Several faculty advisors and preceptors gave specific examples of links they perceived between the program and the "important position" or "meaningful career" in which the past resident was now engaged.

Participants identified two factors that contributed to this career and life benefit: a supportive and mentored learning environment, and the opportunity to learn new skills in a practice setting. Participants felt that residents had the opportunity to be intensively mentored and supported as well as exposed to a variety of role models. This environment was viewed as providing a "support system" and a "foot in the door" to career opportunities.

Participants noted "real" and "practical" work experience, along with knowledge of "how the system works" as critical factors in helping "prepare them for research in the real world." The experience of "taking a project through all its stages, dealing with not being able to do exactly what you wanted to do—reality vs. research world" was not seen as being provided through academic training. As one preceptor explained:

> That whole exposure to bureaucracy and government systems and how things work and how decisions are made….. as [she] plans her career, and as [she] determines where she wants to land, after completing her masters, you know, she will have a lot of insights in how decisions are made…. We were in front of cabinet and senior elected politicians on a lot of issues when she was there—a lot of accountability and pressures—weighing budget and health, wow that is sometimes tough.

Another preceptor described a particular residents' experience:

> I think what she learned … had nothing to do with subject matter, but with how government works and negotiating [one's] way through different organizations…. Privacy of information, how you have to work to get information from people, that [people] were not

> always interested in cooperating, [understanding] the time needed to get things done, that you get further if you meet with people face to face, applying for ethics, submitting for publication.

Participants often noted the importance of learning how to "interface with bureaucracy," "[deal] with nurses," "[work] with stakeholders," "[work] across disciplines," or "[work] with people from different areas." The requirement to work collaboratively was seen as having the potential to affect students' "future attitudes": "He saw a scientist and a clinician working together very collaboratively…..This is important as at Dalhousie University things are often quite siloed."

Faculty advisors also stressed the importance of residents learning "how research could inform practice." Some also noted that residents gained new content knowledge (e.g., health economics, medication reviews) or methods skills sets (e.g., qualitative methodology, literature review, writing skills), many of which the resident would not have been exposed to in his or her program of study. Faculty advisors also noted that residents were learning how to manage research projects—from negotiating access, writing a protocol, getting ethics approval, getting access to data and assessing its quality, and conducting a systematic review, to data collection and analysis, to publishing and presenting findings to various audiences.

A number of participants noted the benefits to residents of producing a peer-reviewed publication (some specifically noted publication in "high impact journals" or "a highly recognized publication") and of learning the skills for preparing abstracts and making effective presentations. Some residents gained "access to data" that they would not otherwise have had.

There was also the opportunity to "develop relationships" —to interact with individuals in a variety of roles. The "relational capital," often gained through interacting with those described as "world class people," was linked directly to the resident's future career success.

Another program impact noted was that the experience had given some residents new insights into their career options, suggesting that for many it had "kindled their interest in doing research"; for others, it "gave them direction," and for some, it "refocus(ed) their career plans." Many of the residents also noted that they "want something that is interesting, that is cutting edge … that is at the same time very relevant in practice, that will make a change." A major benefit to students was knowing that "the results will have an actual impact in our local context."

Impacts on the Health System

Both faculty advisors and site preceptors noted impacts of the program on the health system. While some residencies were observed to have direct impact on policy or practice, many more were seen as a contributing factor in a complex decision-making environment. One preceptor noted that "policy changes occur in a fraction of degree—many things contribute. [There] are 50 variables affecting any decision…. [one is] never entirely sure what led to change."

Impacts were reported at the program, facility, and policy level, and included both "instrumental" (direct) and conceptual impacts (Graham, Bick, Tetroe, Strauss, & Harrison, 2010; Weiss, 1979). For some, simply getting the project completed was seen as a major accomplishment. Several participants mentioned that the residency allowed the organization to complete research-related activities that would not have otherwise been possible. As one preceptor noted, they "got work done that we otherwise would not have done." The academic "rigor" of specific projects resulting from oversight and guidance provided by academic advisors with specialized research skills was often identified as giving programs or departments the confidence to move ahead in planning. According to one preceptor, "We would do it faster with less methodological rigor; they prompt us to do more and better… added value to the answer."

Many participants spoke of concrete and direct actions taken as a result of the projects as well as the added value of including the resources of the program in addressing health system challenges.

One preceptor noted that "a formal position for research in the pharmacy department [was created]—a very practical kind of change, exposure to the program was a big factor," and another preceptor shared that "a direct result" of the project was that it "led to legislative changes…. Data was used to justify [the proposed changes] to Minister of Health." Similarly, another faculty advisor explained:

> [We] have added date of death to the PMP [Prescription Monitoring Program] database, changes to the database that enables further research. As a result of residency the resident got a 6-month position to develop a proposal to link [A] and [B] data—this was huge.

One faculty advisor stated that, as the result of the project "major differences in how [issue] is managed" were observed. This advisor described the experience as "pretty impressive. It is especially rewarding when research not only sort of adds new knowledge at the theoretical and publication academic level, but also at the practical level and makes changes for patients."

Others talked about the contribution made to decisions—from helping to "put in a decision support system," to a "move to create a data dictionary," to changes in funding. Several faculty members emphasized their knowledge of the impact of the resulting publications. One faculty advisor noted that there were "many requests for the report and publication and many follow up questions." Another faculty advisor stated that the report "was phenomenally downloaded from website, so [it was] most likely practitioners, not academics so we think it had a big impact."

More common than direct instrumental use of findings, however, was the often reported "conceptual use" of results, which was seen as making a contribution either to informing action or in how preceptors thought about problems. According to one preceptor, "[The] biggest outcome was a thoughtful examination of an issue based on the evidence that allowed us to get out of the emotion." Another preceptor noted:

> It got us thinking and connected … learning to ask questions to match the data, understanding that translational research is increasingly multidisciplinary… how important for disciplines to be working together. …. I am sure that the program helped us to succeed because we had no idea of how to use pharmacare data before that.

In a few residencies, preceptors and/or faculty advisors felt there had been little impact or were unsure whether there had been any. In some instances, this was because the project was preliminary and not intended to result in change; in others, participants hoped for change that for various reasons did not materialize.

Impact on Academia

Few impacts were reported on academia as a whole, though individual benefits to both students and faculty members were observed, and a few participants noted the benefits of collaboration with other faculty.

Academic incentives and disincentives were explored directly. Somewhat surprisingly, given current discussions about academic disincentives around faculty members' engagement in collaborative activity with the health system, the majority of faculty advisors were positive about the support received from their faculty for their involvement in the DUMPRP. Some stated that they included this involvement in faculty workload documents, or they highlighted conference poster and oral presentations and peer-reviewed papers that came out of the projects. One faculty advisor stated, "I was promoted that year—put it in my CV—I'm sure it's of benefit.… No doubt that it gives status in the faculty to supervise research students. Our faculty views these roles as important, so it's encouraged".

There were also a number benefits to faculties (not simply to individuals) identified. One faculty advisor said:

> Interdisciplinary programs are something we value as a faculty, it is one of the strengths of the faculty. I believe the program got in touch with me through the Dean. Expanding interdisciplinary work is part of our department's strategic mission.

However, other advisors reported that responses to their contribution were more mixed. For instance, one faculty advisor noted that while participation was "definitely looked on positively at performance review," another explained that participation "doesn't count very much…. I can't even remember if I included it in my last one. I don't know how widely valued it is from a faculty perspective. I don't think it is."

A small number of faculty members were quite critical of the level of academic support, and some noted a disconnect between what was stated as valued and what was actually given credit in terms of tenure and promotion. One faulty advisor said, "I could never put this on my annual review as there was no category.... I have to account for every second, there is micromanagement, so have to prove this is useful and beneficial to the department." Another faculty member agreed, stating that "there is an expectation that [faculty] only do things for which we get paid. I think we should be about intellectual enlightenment." A third faculty advisor stated, "Involvement with grad students is often seen as important part of work life, but that it took so much time I couldn't dedicate to my research activity is a drawback, because that is what drives the performance evaluation."

Impact on the Process of Collaboration

A few participants reported no direct knowledge of system impacts but referenced the collaborative process as predictive of future impact. The program was seen as a major contributor to building intersectoral, interprofessional, and interdisciplinary relationships. Residencies were seen as providing "opportunities for academics of different disciplines to work together" or building "a connection between (two) faculties." Several noted that the program "served as glue" for getting people to work together, whether the project was a success or not. Some commented on the "relational capital" developed as the result of the program, and many participants cited specific examples of improved communication and collaboration.

Others noted that education is generally becoming "less formal and classroom based." This "broadening of education" was seen as the "the way of the future" to which the program was contributing, and the involvement with real-life issues as a unique learning opportunity. As one faculty advisor observed, "Increasingly, the market is requiring personal experience." Another faculty member stated that "these internships are a crucial part of professionally oriented graduate programs.… They have meaningful research topics that can lead to a masters [thesis] set in very practical settings. Students can work with real data, have data access."

While a number of *potential* risks and downsides for service-learning programs were identified, only three negative impacts were reported by participants in this particular program: the risks of relying on "soft" funding for a program that required significant start-up investment, and the challenges related to (a) time commitments of preceptors, faculty advisors, and students, and (b) the timeframe of the residencies (both the timing of residencies, and the total time allocated). Other potential risks (e.g., failure to achieve anticipated results or work not being up to standard; negatively impacting the student's program of studies; lack of professional and confidential behavior by the resident) did not materialize and were felt to be well-managed by the program. Some participants noted that the risk that evidence generated by the residency would not be taken up by the health system was greater than any risk inherent in the program. As noted by one faculty advisor "the

risk is more of being ignored by health system … challenges are external to the program;" similarly a preceptor stated that the "more likely risk is government will go off on its own and misuse data."

Factors Associated with Success

Given the largely positive response to the residency experience, interviews explored factors which participants associated with success and gathered advice for similar initiatives. Factors associated with success included: (a) program leadership and credibility; (b) timely supports for advisors and preceptors; (c) careful selection of residents; (d) in-person collaboration among residents, preceptors, and advisors; (e) selection and design of projects feasible for the timeframe; (f) learning opportunities for preceptors and faculty advisors; and (g) responsiveness to the host organization. Participants emphasized the need for the program, its quality, and unique role in promoting interdisciplinary, interprofessional, and intersectoral collaboration.

Suggestions for Change and Improvement

The challenges and frustrations of participants framed many of the suggestions for change and improvement—suggestions that have implications for other service-learning projects. Suggested areas of improvement focused on clarity of role and expectations, and addressing the time commitments and timeframes. Suggestions were also made regarding the need for thoughtful criteria in the selection of residents and faculty advisors, and for integrating additional opportunities for interaction among all participants. The need to promote greater awareness of the program and broaden its scope beyond pharmacy was also noted.

Many participants, however, focused their suggestions on the need for larger system change—by funders, academic institutions (including research ethics boards) and the health system itself—if service-learning initiatives were to achieve their potential. There was also a general sense among many interviewees that opportunities were being lost because program benefits were not recognized by all players. As noted by one preceptor:

> Not taking advantage of integrating the education of students with the work that needs to be done ….we don't have money to do all the things we want to do. I teach the students and they become valued members in the short term, and valuable future employees in the long term.

Discussion

Our findings indicate there is an awareness of the changing landscape and expectations of collaborative research within both academia and the health system, and much personal motivation to provide these expanded learning opportunities. In addition, this research suggests a number of "preconditions" (e.g., a specific "ask," credibility of program leadership, perceived personal and health system benefits, fit with interests) that service-learning programs would be wise to ensure are in place before inviting involvement of either health system preceptors or faculty advisors. Appropriate motivation, orientation, and ongoing supports appeared to ensure the commitment of the majority of advisors, even when participants encountered challenges (and workloads greater than expected). This research also highlights the characteristics associated with preceptor and faculty advisor assessment of success in service-learning programs. A major factor in the support for and reported impacts of this particular program appears to be attributable to the skills, characteristics, and commitment of the program director and staff—that is, the "personal factor" highlighted in evaluation theory (Patton, 1997). Characteristics and skills seen as necessary included: (a) ability as

"a bridge builder between the ivory tower and the department of health"; (b) mentorship skill in this emerging field of collaborative research; (c) the ability to match projects with people and needs ("linking people within the research community together with a variety of interests"); and (d) interpersonal skills that attracted collaboration. These generic competencies appear to be critical; programs working in this area would be advised to select leadership and staff with strengths in this area (Stanton, Giles, & Cruz, 1999).

This research also illustrates the type of reciprocity that can occur in well-designed service-learning initiatives (Gelmon, Holland, Driscoll, Spring, & Kerrigan, 2001; Vogel, Seifer, & Gelmon, 2010). In addition to benefits to residents, academic faculty and preceptors reported personal and career benefits of their involvement: the opportunity to engage in interprofessional, interdisciplinary, and intersectoral partnerships was seen by many as a unique benefit (for some, the most important benefit). This collaborative experience was not only personally and professionally meaningful to faculty advisors and preceptors but was also perceived as an opportunity to prepare for anticipated future demands (within both the health system and academia) for various kinds of transdisciplinary and intersectoral work. Participants recognized that many complex issues facing the health system could not be solved by individual researchers working alone or by one discipline (Australian Public Service Commission, 2007; Van de Ven & Johnson, 2006). The "synergistic effect of different disciplines involved on a project" (faculty advisor) was experienced as exciting and energizing by many participants—an outcome of potential interest to both the university and to the health system. Also highlighted, however, was the importance of addressing the structural barriers to engaged scholarship. At the same time, it is encouraging to see that some faculties or departments (in some cases individual administrators) are able to create an environment where individual faculty members feel supported in such work, even in the absence of campus-wide initiatives to reward engaged scholarship.

There are limitations to this study. First, results are based on self-reporting of only faculty advisors and preceptors. Self-selection bias is also possible: It may be that those who had less positive experiences would be less likely to respond to the invitation to participate. This was the reason for selecting an external evaluator who had no relationship with the program. It was noted, however, that the response rate, especially among preceptors, was very good (particularly given the time lapse since many had been involved in the program) and that many participants talked frankly about their frustrations. The small number who declined the interview (N = 3) cited current personal issues or previous input into evaluation activities as reasons for non-participation. Despite these potential limitations, and the fact that the study evaluated only one initiative situated within the context of the Canadian health system, findings provide important insights into the benefits—and challenges—of service-learning programs focused on policy and management issues within the health field. They also provide direction for guiding development of similar initiatives.

Implications of Findings

While some faculty advisors felt that their involvement was actively supported and recognized, others stressed the need for tangible reward systems, often noting the misalignment between stated commitment for student supervision and system engagement, and what was actually rewarded. Several faculty advisors felt that their involvement in the residency program had benefited both their teaching and their research (i.e., it was not simply a service role), highlighting the need to build greater awareness of potential benefits of such engagement to the university as a whole (Van de Ven, 2009). Both faculty advisors and preceptors viewed involvement in the program as beneficial to the Dalhousie University public profile and credibility, and others stated that the practical exposure provided by the program was the type of experience students were seeking. This suggests that universities that are effective in developing such programs may have a recruitment advantage in the future. However, there are several challenges to implementing such change (Bortolin, 2011; Stanton,

Giles & Cruz, 1999). A major challenge will be the innovation needed to build learning experiences around the "real-time, real-life size" of health system issues rather than assuming that host agencies will accommodate the university semester system (Lomas, 2000). Funders will need to continue to innovate to support service-learning.

Service-learning models vary in the ways they balance promoting student learning and providing a service to the community (Stanton, Giles & Cruz, 1999). Some research suggests that programs can prioritize academic needs and be a burden to the sponsoring organization (Bortolin, 2011; Stoecker & Tyron, 2009). Artificial timelines and "make work" activities are often important challenges, as are the opportunity costs of supporting the project. The need to fit specific academic structures may hinder both the learning potential and the usefulness of these projects to the sponsoring organization (Sketris, 2013).

One of the main motivators for preceptor engagement was anticipated benefit to the health system of the specific residency project. Also noted was the anticipated long-term benefit of helping to prepare researchers who know how to work in collaboration with practitioners and decision-makers, and understand the realities of the practice and policy worlds. Some experienced preceptors stated in retrospect that they would be more assertive in negotiating future residencies. In recent years, standards for collaborative research activity have emerged (CIHR, n.d., 2012), and there is increasing recognition of the need to ensure that the "costs" of the host organization are recognized in such endeavors.

Engaged scholarship in Canada is driven not, as in the U.S., by the history of land-grant universities (which has resulted in a call for such universities to "return to their roots") but by targeted funding opportunities requiring community-institution partnership (Bowen, 2013; Glass & Fitzgerald, 2010). This means that research funders are a critical player in promoting service-learning activities in Canada. This evaluation highlights several issues that should inform future support for collaborative education initiatives. First, several participants highlighted the importance of start-up time in the effectiveness of new programs and they cited the potential loss of investment if ongoing funding was not obtained, suggesting that funding should require a plan for sustainability. Rigorous evaluation designed to increase transferable knowledge in an under-researched area should also be a requirement. Some participants also felt that funders needed to give "greater emphasis to meeting health system needs, rather than focus on using academic outputs," and that such programs should deal with health system priorities and "communicate that to the university."

Conclusion

This research provides one of the first evaluations of the potential contributions of service learning initiatives to support health policy and program initiatives. It identifies the benefits experienced by both health system preceptors and academic advisors as well as their perspectives on benefits to student participants and the overall health system. It also adds to the literature on the (a) characteristics of and preconditions for effective service-learning programs, and (b) the range of potential impacts of such programs on individuals and the larger society. It highlights growing awareness of the need for alternate educational strategies to prepare researchers to work in collaboration with the health system and the need to address structural and operational issues that hinder such collaboration.

Further research is needed to explore whether the principles identified in this research are transferable to other service-learning initiatives in other settings. It would also be of interest to investigate systematically the perceived benefits to the health system and to student graduates. Follow up on graduate employment and research accomplishments is planned, with initial data collection underway. This will provide insights into the impacts of the program on student learning and employability.

Universities are under increasing pressure to become more "entrepreneurial" and to find creative solutions to their many current challenges (Gibb, Haskins, & Robertson, 2013). Our findings suggest that effective service-learning programs may help address many of these challenges, including student expectations regarding employability, design of academic programs, promoting research relevance and use, building local community support, and promoting responsiveness to pressing societal issues.

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Correspondence

Correspondence concerning this article should be addressed to: Sarah Bowen, Applied Research and Evaluation Consultant; sarahbowen.parada@gmail.com

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